CHAPTER V
PLAN FORMULATION APPROACH

This chapter discusses the process of formulating plans for the SLWRI, and presents the planning objectives, planning constraints and criteria, and mission statement for the study.

PLAN FORMULATION PROCESS

The basic plan formulation process for Federal water resources studies and projects consists of the following steps:

- Identifying existing and projected future resource conditions without implementation of a project.
- Defining water resources problems and needs to be addressed.
- Developing planning objectives, constraints, and criteria, and an overarching Mission Statement.
- Identifying resources management measures and formulating potential alternative plans to meet study objectives.
- Comparing and evaluating alternative plans.
- Selecting a plan for recommended implementation.

For the SLWRI, the above process was separated into four phases, as shown in **Figure V-1** and described below:

- **Mission Statement Phase –** Identify without-project future conditions, define resulting resources problems and opportunities, define a specific set of planning objectives, identify the constraints and criteria in addressing the planning objectives, and develop a concise Mission Statement based on study objectives.

- **Initial Plans Phase –** Identify potential resources management measures to address planning objectives, and formulate, coordinate, and compare a set of concept plans. From these concept plans, a set of initial alternatives will be identified.

- **Alternative Plans Phase –** From the initial alternatives, formulate specific alternative plans to address the planning objectives; evaluate, coordinate, and compare the plans; and identify a plan for tentative recommendation.

- **Recommended Plan Phase –** Complete the development of a tentatively recommended plan and prepare, coordinate, and process supporting decision documentation.

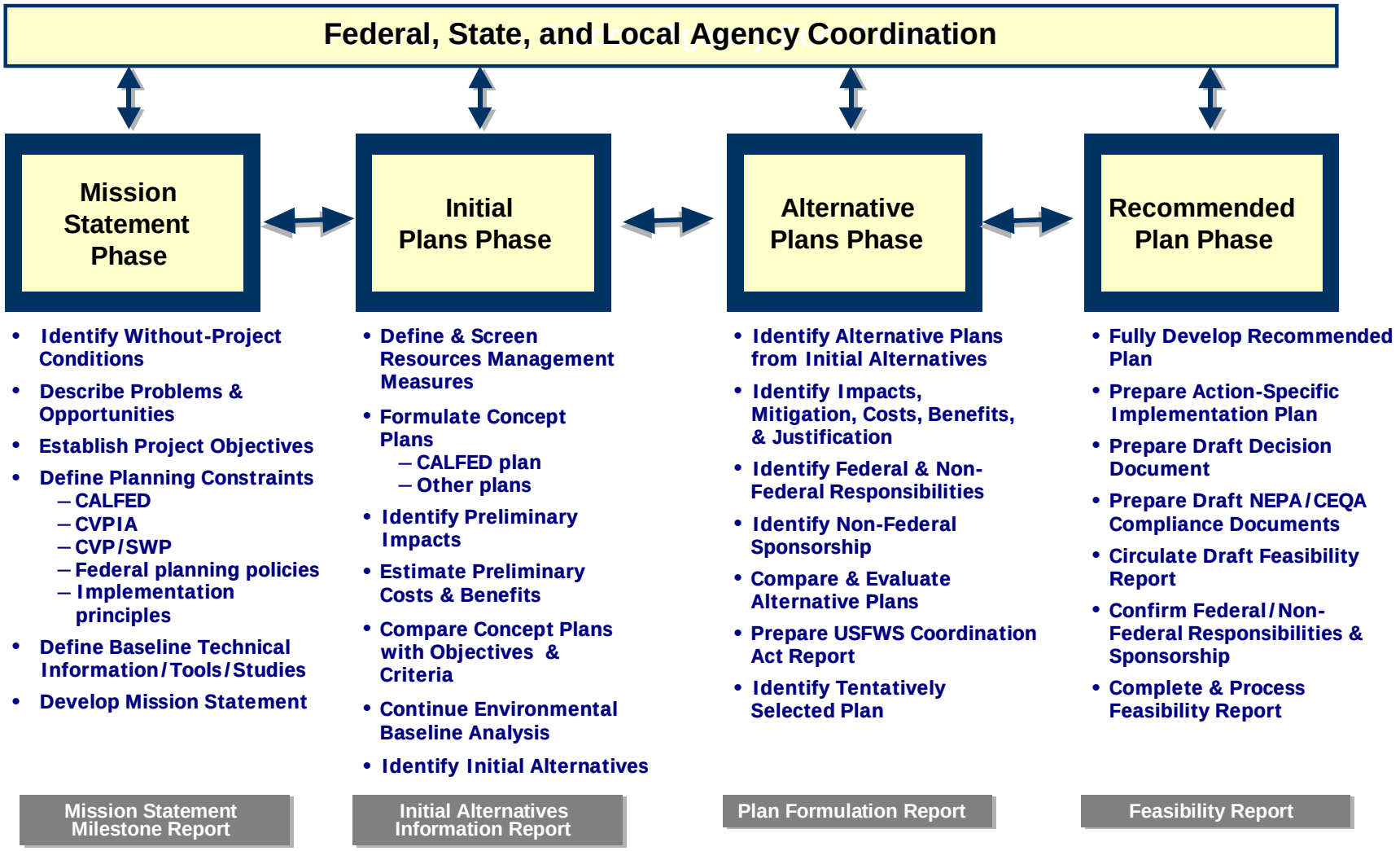

Figure V-1 – Plan formulation process.

The first two phases, Mission Statement and Initial Plans, are nearing completion. A summary of existing and potential future without-project conditions (consistent with the NEPA Baseline) and problems and needs is included in **Chapters III** and **IV**. This chapter presents the identified planning objectives, constraints, and criteria, and resulting Mission Statement to help guide the SLWRI. **Chapters VI**, **VII**, and **VIII** describe the formulation of a set of initial plans. First, **Chapter VI** identifies resources management measures. From these measures, a representative set of concept plans was formulated, which is included in **Chapter VII**. **Chapter VIII** compares the concept plans and identifies initial alternatives for further development in feasibility studies for the SLWRI.

PLANNING OBJECTIVES

On the basis of the previously identified and defined problems and needs in the study area, and in relation to study authorities, the following planning objectives were developed. These objectives are to be used to help guide formulation of alternatives to address the problems and needs, and are separated into primary and secondary objectives. Primary objectives are those for which specific alternatives would be formulated to address. Secondary objectives are opportunities that should be considered in the plan formulation process, but only to the extent possible through pursuit of the primary planning objectives.

- **Primary Objectives** – Formulate alternatives specifically to address the following:
    - Increasing the survival of anadromous fish populations in the Sacramento River primarily upstream from the RBDD.
    - Increasing water supplies and water supply reliability for agricultural, M&I, and environmental purposes to help meet future water demands, with a focus on enlarging Shasta Dam and Reservoir.
- **Secondary Objectives** – To the extent possible, through pursuit of the primary planning objectives, include as opportunities features to help accomplish the following:
    - Preserving and restoring ecosystem resources in the Shasta Lake area and along the upper Sacramento River.
    - Reducing flood damages along the Sacramento River.
    - Developing additional hydropower capabilities at Shasta Dam.

PLANNING CONSTRAINTS AND CRITERIA

Planning constraints and criteria used to help guide the investigation are described in this section.

Constraints

Fundamental to the plan formulation process is identifying and developing basic constraints specific to this investigation. Planning constraints are used to help guide the conduct of the feasibility study. Some planning constraints are more rigid, including Congressional direction;

current applicable laws, regulations, and policies; and physical conditions (topography, hydrology, etc.). Other planning constraints are less stringent for the feasibility study but still influential in guiding the process. Examples include existing water resource projects and programs such as CALFED and the CVPIA. Accordingly, several major constraints in formulating and ultimately implementing a plan to meet study objectives are as follows:

- **Study Authorization** – The authorization provides for an investigation of the potential benefits of enlarging or replacing Shasta Dam and Reservoir.

- **Laws, Regulations, and Policies** – Numerous laws, regulations, executive orders, and policies need to be considered, including NEPA, Fish and Wildlife Coordination Act, Clean Air Act, Clean Water Act, Federal and State ESAs, CEQA, and the CVPIA.

- **CALFED Record of Decision** – The CALFED ROD includes program goals, objectives, and projects primarily to benefit the Bay-Delta system. The ROD has been adopted by various State and Federal agencies for further consideration. In addition to enlarging Shasta Reservoir, the PPA in the ROD includes four other surface water and various groundwater storage projects to help reduce the discrepancy between water supplies and projected demands. The program also includes numerous other projects to help improve the ecosystem functions of the Bay-Delta system. Developed plans should be cognizant of the goals, objectives, and programs/projects of the CALFED ROD.

Principles and Criteria

In addition to the planning constraints, a series of planning principles and guidelines help guide plan formulation and planning criteria for consideration not only in formulating the initial set of alternatives but also to determine which alternatives best address the planning objectives. Many of the planning principles and guidelines are included in the Federal Water Resources Council's Principles and Guidelines or "P&G," and other Federal planning regulations. Planning principles and guidelines relate to economic justification, environmental compliance, technical standards, etc. Also, many of the principles result from local policies, practices, and conditions. Several examples in the SLWRI for use in formulating, evaluating, and comparing concept plans, initial alternatives, and later, detailed alternatives include the following:

- Alternatives and their major elements are to be consistent with the identified planning constraints above.

- A direct and significant geographical, operational, and physical dependency must exist between major components of alternatives.

- Alternatives should address at minimum each of the identified primary planning objectives and, to the extent possible, the secondary planning objectives.

- Measures to address secondary objectives should be either directly or indirectly related to the primary objectives (i.e., plan features should not be independent increments).

- Primary consideration should be given to recommendations in the CALFED ROD.

- Alternatives should avoid any reduction in flood control or other significant hydraulic impacts to areas downstream on the Sacramento River.

- Alternatives should strive to either avoid potential adverse impacts to environmental resources or include features to mitigate unavoidable impacts through enhanced designs, construction methods, and/or facilities operations.

- Alternatives should strive to avoid potential adverse impacts to present or historical cultural resources or include features to mitigate unavoidable impacts.

- Alternatives should not result in a significant adverse impact to existing future water supplies, recreation facilities, hydropower generation, and related water resource conditions.

- Alternatives are to reflect the purposes, operations, and limitations of existing and without-project future projects and programs.

- Alternatives are to be formulated and evaluated based on a 100-year period of analysis.

- First costs for alternatives are to reflect current prices and price levels, and annual costs are to include the current Federal discount rate and an allowance for interest during construction.

- Alternatives are to be formulated to neither preclude nor enhance development and implementation of other elements of the CALFED program or other water resources programs and projects in the Central Valley.

- Alternatives should have a high certainty for achieving the intended benefits and not significantly depend on long-term actions (past the initial construction period) for success.

The Federal planning process included in P&G also includes four specific criteria for consideration in formulating and evaluating alternatives: (1) completeness, (2) effectiveness, (3) efficiency, and (4) acceptability. These criteria and how they include planning principles and apply in helping to compare concept plans are described in **Chapter IX**.

MISSION STATEMENT

On the basis of identified problems and needs, primary and secondary planning objectives, relationship to other programs and projects, and Federal planning guidance, the following draft Mission Statement was developed for the SLWRI:

> *To develop an implementable plan primarily involving the enlargement of Shasta Dam and Reservoir to promote increased survival of anadromous fish populations in the upper Sacramento River and increased water supply reliability, and to the extent possible through meeting these objectives, include features to benefit other identified ecosystem, flood control, and related water resources needs.*

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